

SECTION 5.10 VISUAL RESOURCES

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5.10 VISUAL RESOURCES

Visual resources are the natural and cultural features of the landscape that can be seen and contribute to the public's appreciative enjoyment of the environment. Visual resource or aesthetic impacts are generally defined in terms of a project's physical characteristics and potential visibility and the extent to which the project's presence will change the perceived visual character and quality of the environment in which it will be located.

Following the California Energy Commission (CEC) Guidelines for preparing visual impact assessments, this section documents the visual conditions that now exist in the project area and evaluates the implications that the proposed project will have for the public's experience of the project area's aesthetic qualities.

All illustrations in this section are bound together at the end of the section for reader convenience. These include viewshed maps, visual character photographs, and photographic simulations.

5.10.1 Affected Environment

5.10.1.1 Regional Setting

The Tesla Power Project (TPP) is proposed on a site located in a rural area of eastern Alameda County a few miles west of the San Joaquin County in the Altamont Range (see Figure 3.2-1). The Altamont Range is a series of hills that separate the flat valley lands of the Livermore Valley from those of the San Joaquin Valley to the east. The Altamont Range is part of a transitional region between the landscapes of the San Francisco Bay and those of the Great Central Valley of California. The Altamont Range blocks the marine influence of the bay area making conditions very dry, resulting in open grass covered hills almost void of trees. The project location is illustrated in Figure 3.2-1.

The hills of the Altamont Range reach a peak of 1,500 feet above the floors of the two valleys, and provide the dominant background element for views from both the Livermore Valley and the San Joaquin Valley. In views from the San Joaquin Valley, the range appears as a less visually dramatic series of hills and valleys that create a layered composition rather than the single distinct ridgeline seen from the Livermore Valley side. From the Livermore area the range appears as a series of steep hills that rise sharply from the valley floor, creating a well-defined ridgeline.

Rounded hills and smooth contours characterize the region. Scattered throughout the region are many rock outcroppings that contrast with the grasslands. The grazed upland grasslands are golden brown most of the year. Riparian vegetation grows along major drainage swells and streams within the Altamont Range, providing contrast and texture to the dry grassland landscape. The absence of larger, more substantial vegetative species is an important part of the visual character of the region and the prevalence of grasslands reveals the smooth undulating forms of the topography. The grassland-covered terrain undergoes dramatic seasonal changes in color. In the winter months, the predominant color is bright green, with darker green oak and riparian vegetation providing isolated accents. In the spring months,

wildflowers add color: purple lupine, orange poppies, yellow mustard, and white morning glory. During the summer months the range turns a light tan or golden color as the grasses dry. In the fall, the hillsides turn a beige-gray and complete the cycle of seasonal changes.

The region's visual character is heavily influenced by wind farms in the Altamont Pass. The Altamont pass contains the world's largest concentration of wind turbines, which generate electricity. The 6,000 wind turbines in the Altamont pass create a man made forest of steel trees with whirling branches. Most of the older wind turbines stand 60 to 80 feet tall, with the more modern wind turbines standing as high as 300 feet. The turbines are located in rows along the ridgelines of the Altamont Range, which makes them highly visible from long distances. The turbines can be seen from all approaches to the Altamont Range, which create a visually distinctive landscape. Figure 5.10-1 is a typical view of the wind turbines near the TPP site.

Other man made activities have shaped the visual character of the region. The region is primarily a rural, agricultural landscape devoted mostly to cattle ranching, with a few parcels of land dedicated to dry farming of grain and hay crops. It is also a region with very significant infrastructure development that has modified the scenery from rural to modern technological views. Infrastructure facilities which play a major role in the scenic quality of the region include: Interstates 580 and 5; network of high voltage electric transmission lines; PG&E's 500 kV Tesla Substation, California Water Project/Aqueduct, Delta Mendota Canal, Union Pacific railroad, and the Altamont Raceway.

5.10.1.2 Project Site and Linear Corridors

TPP Site

The TPP site layout is illustrated on Figure 3.3-1. A computer generated aerial view of the TPP site is illustrated by Figure 3.4-4. The 60-acre power plant site is relatively level in the center, with low hills on the eastern and western sides of the site. Elevations on the site range from approximately 360 to 400 feet above sea level. Vegetation within the site consists of entirely grasses. There are no trees or bushes on the project site, only open rolling grasslands. The most visually prominent features on the site are several 230 kV and 115 kV electric power transmission lines supported by steel lattice towers that cross the site in a general north-south direction. The northeastern corner of the project site has a water well with a windmill and an abandoned water truck.

Lands used for cattle grazing and wind farms are adjacent to and surrounding the TPP site, and construction laydown area. The PG&E Tesla Substation is located approximately 0.5 mile south of the project site. The Tesla Substation, associated transmission towers, and wind turbines are dominant man-made features in the valley where the TPP project site is located.

Electric Transmission Line—The project includes a 0.9 mile transmission line as illustrated on Figure 3.6-2. The proposed transmission line will be parallel with the existing transmission lines between the project site and the Tesla Substation. The interconnection with the PG&E Tesla Substation will require the relocation of 0.3 miles of the Ravenswood transmission line as illustrated in Figure 3.6-2.

Natural Gas Pipeline—Natural gas will be supplied by a 2.8 mile, 24-inch, buried pipeline that follows the route of PG&E pipeline #107 located along the intersection of I-205 and Patterson Pass Road in San Joaquin County. The pipeline route is illustrated on Figure 3.2-2.

Water Supply Pipeline— The water supply to the TPP site will be transported by a buried 20-inch pipeline for a distance of approximately 1.7 miles. The pipeline will begin at the California Aqueduct located near Midway Road north of I-580. The pipeline will follow the Midway Road right-of-way to the northeast corner of the TPP site. The location of the water supply pipeline is indicated on Figure 3.2-2.

5.10.1.3 Potential Project Site Visibility

The areas from which the TPP plant and transmission line are likely to be visible are illustrated in Figure 5.10-3, Project Viewshed. Since the proposed natural gas and water pipelines would be entirely underground, these project elements were not considered in creating the viewshed map.

Identification of the project's viewshed was based on review of project engineering drawings, visual simulations of the project's appearance from representative observation points, topographic maps, air photos, and field observations.

Areas of possible view were mapped using elevations of the surrounding topography and the height of the proposed TPP project features. Figure 5.10-3 illustrates all the areas within three miles of TPP that have a possible view of the project facilities. This distance was selected because elements of a view that are 3 miles or more from the viewpoint are considered part of the background—the landscape zone in which little color or texture is apparent, colors blur into values of blue or gray, and individual visual impacts become least apparent (USDA Forest Service 1973, pp. 56-57).

The clearest overall view of the site is from Midway Road along the section of roadway, which borders the eastern side of the proposed site. At this location, views to the area are open, with no obstructions. The project site can be seen intermittently from Patterson Pass Road. Views are blocked in areas where the hills start on the west and east side of Midway Road. The hills to the north of the project site block the view from Interstate 580. The Tesla Substation obstructs views of the site along Patterson Pass Road to a large degree. Because the project site is located in a small valley surrounded by rolling hills, the sight distance of any view is limited by the immediate hills.

5.10.1.4 Sensitive Viewing Areas and Key Observation Points

To assess the TPP potential impacts on visual resources, identification was made of the view areas most sensitive to the project's potential visual impacts, and in consultation with CEC staff, six Key Observation Points (KOPs) were selected for detailed analysis. For all of these KOPs, photo simulations were developed to serve as a basis for visualizing the plant's potential effects. In evaluating the sensitivity of the viewing areas potentially affected by the project, consideration was given to distance from the project site, numbers of viewers, duration of the project in the viewshed, and the presence of residential or recreational uses.

The sensitive viewing areas selected for analysis are indicated on Figure 5.10-3. All KOPs are given further discussion and description below.

To respond to the CEC's requirement that an assessment be made of the visual quality of the landscapes potentially affected by the project, the discussion of the views seen from the KOPs includes ratings of the visual quality of the landscapes that they represent. These ratings were developed based on a series of in-field observations carried out during the period from April through July 2001, where review of photos of the area, review of methods for assessment of visual quality, and review of research on public perception of the environment and scenic beauty ratings of landscape scenes were conducted. The final assessment of the visual quality of the views from each of the KOPs was made based on professional judgment that took a broad spectrum of landscape assessment factors into consideration. The factors considered included evaluation of:

- natural features, including topography, water courses, rock outcrops, and natural vegetation
- the positive and negative effects of man-made alterations and built structures on visual quality
- visual composition, including assessment of the complexity and vividness of patterns in the landscape and
- spatial organization, including assessment of criteria such as perceived accessibility, mystery, enclosure, scale, image, refuge, prospect, and contemplation

The relevance of these factors for landscape evaluation has been established by landscape perception and assessment research that has taken place over the past 20 years. The final landscape quality ratings developed based on these considerations were expressed in terms of the six landscape quality classes listed in Table 5.10-1. This rating system is based on the scale developed for use with an artificial intelligence system for evaluation of landscape visual quality developed by a group of landscape scholars at Virginia Tech (Buhyoff et al., 1994). This scale provides a robust framework for the qualitative ratings because it is based on the findings of the full range of available research on the ways in which the public evaluates visual quality. In addition, the scale has a common-sense quality and is easily understood because it defines landscape quality in relative terms, contrasting landscapes that are average in visual quality with those that are above and below average, and those that fall at the top and bottom of the landscape quality spectrum.

Table 5.10-1 Landscape Visual Quality Scale Used in Rating the Areas Potentially Affected by the TPP

Rating	Explanation
Outstanding Visual Quality	A rating reserved for landscapes with exceptionally high visual quality. These landscapes will be significant regionally and/or nationally. They usually contain exceptional natural or cultural features that contribute to this rating. They will be what we think of as “picture post card” landscapes. People will be attracted to these landscapes to be able to view them.
High Visual Quality	Landscapes that have high quality scenic value. This may be due to cultural or natural features contained in the landscape or to the arrangement of spaces contained in the landscape that causes the landscape to be visually interesting or a particularly comfortable place for people. These are often landscapes that have high potential for recreational activities or in which the visual experience is important.
Moderately High Visual Quality	Landscapes that have above average scenic value but are not of high scenic value. The scenic value of these landscapes may be due to man-made or natural features contained within the landscape, to the arrangement of spaces, in the landscape or to the two-dimensional attributes of the landscape.
Moderate Visual Quality	Landscapes that have average scenic value. They usually lack significant man-made or natural features. Their scenic value is primarily a result of the arrangement of spaces contained in the landscape and the two-dimensional visual attributes of the landscape.
Moderately Low Visual Quality	Landscapes that have below average scenic value but not low scenic value. They may contain visually discordant man-made alterations, but these features do not dominate the landscape. They often lack spaces that people will perceive as inviting and provide little interest in terms of two-dimensional visual attributes of the landscape.
Low Visual Quality	Landscapes with low scenic value. The landscape is often dominated by visually discordant man-made alterations; or they are landscapes that do not include places that people will find inviting and lack interest in terms of two-dimensional visual attributes.

Note: Rating scale based on Buhyoff et al., 1994.

KOP 1 – Midway Road Directly Northeast of the Project Site

Figure 5.10-4a represents the view from KOP 1. This viewpoint was selected to represent views toward the TPP site from Midway Road located immediately northeast of the site. This KOP is located just off of Midway Road, approximately 300 feet from the project northern property line. This view is primarily seen by viewers in cars as they drive south on Midway Road, however it can also be seen by viewers traveling north. From this viewpoint, the background consists of rolling grass hills and numerous wind turbines along the ridgelines. The most visually prominent middle ground elements in this view are the lattice steel electrical towers that range from 90 to 120 feet in height that are on portions of the project site. Because this view contains man-made elements such as the wind turbines and steel lattice towers in the middle ground and background, this view is considered to have moderate visual quality. The sensitivity of this view is considered to be moderately low, in that the view is seen by a relatively small number of people who are only exposed to this view for a short duration while driving by in either direction.

KOP 2 – Midway Road Southeast of the Project Site

Figure 5.10-5a represents the view from KOP 2, which is a view to the west from Midway Road, for vehicles traveling northbound. This KOP is located approximately one quarter of a mile away from the project site. Vehicles traveling south on Midway Road will not have a view of the project site from this KOP because there is a low hill located on the western side of Midway Road.

The major elements in this view include the rolling grass hills of the base of Altamont Pass. In the background, there is an abandoned rail line, which is visible from this site. There are several steel lattice electrical towers, which are prominent in the middle ground in this view. There is a lack of vegetation in this view besides the dry yellowish-tan grass. Even though there are hills in the surrounding area, the view from this site is of mainly flat land, which tends to be surrounded by rolling hills. A moderately low visual quality is assigned because the view contains man made features in the middle ground, which defines the scenic quality of the landscape. Although the number of viewers along Midway road is low, they have a relatively sustained view as they travel north and approach the site, therefore visual sensitivity is considered moderate.

KOP 3 – Midway Road/Patterson Pass Road Intersection

Figure 5.10-6a represents the view from KOP 3, which was selected to represent views toward the TPP site from the intersection of Midway Road and Patterson Pass Road. This viewpoint is approximately 0.7 mile from the southeast corner of the project. This viewpoint was selected to represent views toward the project site experienced by northbound travelers on Midway Road, as well as westbound travelers on Patterson Pass Road. Because these roads have low to moderate levels of traffic and they are relatively far from the TPP site, the sensitivity of this view is considered to be moderately low.

The main visual features in this view are the electrical transmission lines converging on Tesla Substation that is directly to the west and just out of the view illustrated in Figure 5.10-6a. When looking to the north, the main views are of rolling hills with land used for grazing, up to the Union Pacific right-of-way on the northern border of the TPP project site. This northward view has electrical transmission lines and towers in the foreground and middle ground as a main feature. Because of the presence of the visually prominent transmission towers and conductors, the visual quality of this view can be classified as moderately low.

KOP 4 – View from Nearest Residences to the Southeast

KOP 4 was selected to represent views toward the TPP site from the nearest residences, approximately one mile to the southeast of the project site. Figure 5.10-7a is a photograph of the view taken in front of the residence with the most direct view of the TPP site, approximately 300 feet south of Midway Road (see Figure 5.10-2). There are three residences in the vicinity of this KOP, which will have similar views of the project site. Besides the daily travel to and from these residences, the only others experiencing this view will be visitors to these residences. Due to the low number of persons experiencing this view and the distance from the project site, the visual sensitivity for this KOP can be classified as moderately low.

KOP 4 has a direct view of the Tesla Substation to the west, the electrical transmission lines in the foreground, middle ground, and background converging on the substation. Because of the dominance of substation and transmission lines, the visual quality of this view is considered moderately low.

KOP 5 – Entrance to Mulqueeney Ranch at Patterson Pass Road

Figure 5.10-8a represents the view from KOP 5, located on Patterson Pass Road at the entrance to Mulqueeney Ranch. This KOP is located 0.7 mile south from the TPP project site. Passengers in vehicles travelling east on Patterson Pass Road or entering the road from the Mulqueeney Ranch can see this view of the TPP site. Because of the rolling hills between the TPP and the KOP, there is not a clear view of the project site. The segment of Patterson Pass Road that has an unobstructed view of the project has a very short duration of only a few seconds when traveling at normal speeds. Because of the limited views of the site and the distance from the site, the sensitivity of this view is considered moderately low.

In the foreground view of this KOP is the Tesla Substation and several lattice towers. The entrance of the ranch is located approximately 50 feet from the Tesla Substation itself. Because of the dominant man-made features of the Tesla Substation and associated transmission towers, the visual quality of this view is rated as low.

KOP 6 – View From the Rail Line Toward the Northeast

KOP 6 was selected to illustrate the view of the TPP site from the Western Pacific rail line at a location that is approximately 1.3 miles southwest of the site. Figure 5.10-9a shows the view that the rail passengers will see when looking to the northeast. This view will be apparent to trains traveling east and west over Altamont Pass. Although the project site is approximately 1.3 miles from the KOP, the relatively large number of viewers and the generally unobstructed view indicate the sensitivity of this view should be considered moderate.

Railway passengers will experience a series of views of rows of wind turbines in the background, middle ground, and foreground as they approach this KOP. At this specific location, where the project site is approximately 1.3 miles away, the dominant visual features are the wind turbines in the middle and background areas of the view. Because of the dominance of the wind turbines and the homogeneity of the landscape, visual quality is considered moderately low.

5.10.2 Environmental Impacts

5.10.2.1 Analysis Procedure

This analysis of visual impacts potentially caused by the TPP is based on field observations and review of the following information: local planning documents, project maps and drawings, photographs of the project area, computer-generated visual simulations from each of the KOPs, and research on design measures for integrating electric facilities into their environmental settings.

Photographs are presented to represent the “before” conditions from each KOP. Visual simulations were then produced to illustrate the “after” visual conditions from each of these points, providing the viewer with a clear image of the location, scale, and visual appearance of the proposed project. Two versions of the “after” conditions are presented, one at start of operation and one at 20 years after start of operation. The computer-generated simulations are the result of an objective analytical and computer-modeling process described briefly below. The images are accurate within the constraints of the available site and project data. Site reconnaissance was conducted with the assistance of CEC staff (Gary D. Walker) to view the site and surrounding area, to identify potential key viewpoints, and to take representative photographs of existing visual conditions. A single lens reflex (SLR) 35 mm camera with a 50 mm lens (view angle 40 degrees) was used to photograph the sites.

For the views from the KOPs, computer modeling and rendering techniques were used to produce the simulation images. Existing topographic and site data provided the basis for developing an initial digital model. Project engineers provided site plans and digital data for the proposed generation facility, and site plans and elevations for the components of the transmission system. These were used to create three-dimensional (3-D) digital models of these facilities. These models were combined with the digital site model to produce a complete computer model of the generating facility and portions of the overhead transmission system.

For each viewpoint, a viewer location was digitized from topographic maps, using five feet as the assumed viewer eye level. Computer “wire frame” perspective plots were then overlaid on the photographs of the views from the KOPs to verify scale and viewpoint location. Digital visual simulation images were produced as a next step based on computer renderings of the 3-D model combined with high-resolution digital versions of base photographs. The final “hardcopy” visual simulation images that appear in this AFC document were produced from the digital image files using a color printer.

5.10.2.2 Impact Evaluation Criteria

Analysis of the project’s impacts was based on evaluation of the changes to the existing visual resources that would result from construction and operation of the TPP. An important aspect of this analysis was evaluation of the “after” views provided by the computer-generated visual simulations, and their comparison to the existing visual environment. In making a determination of the extent and implications of the visual changes, consideration was given to:

- The specific changes in the affected visual environment’s composition, character, and any specially valued qualities
- The affected visual environment’s context
- The extent to which the affected environment contains places or features that have been designated in plans and policies for protection or special consideration and
- The numbers of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities affected by the likely changes

To make the determination of whether the project's visual effects would be "significant" under the provisions of the California Environmental Quality Act (CEQA), reference was made to Appendix G of the State CEQA Guidelines. The CEQA Guidelines define a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including objects of historic or aesthetic significance" (14 CCR, § 15382). Appendix G of the Guidelines, under Aesthetics, lists the following four questions for lead agencies to address:

- Would the project have a substantial adverse effect on a scenic vista?
- Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
- Would the project substantially degrade the existing visual character or quality of the site and its surroundings?
- Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

In addition, the CEQA Guidelines, under the Land Use and Planning section, pose the question as to whether the project would conflict with any applicable land use plan, policy, or regulation (including, but not limited to a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

To implement these criteria for assessment, the CEC staff has determined¹ that significant project visual impacts would result from:

- Conflict with applicable implementing policies, ordinances, or other regulations for visual resources identified in the general plans or zoning ordinances of the local governments with jurisdiction over the project;
- Substantial reduction in the visual quality of views identified to be of moderate or high visual quality and high or moderately high viewer sensitivity;² or
- Creation of a new source of substantial light or glare in a location where it didn't exist before and which would adversely affect day or nighttime views with high or moderately high viewer sensitivity.

To respond to the ways that the CEC applies the CEQA significance standards, the following set of evaluative criteria were used to assess the significance of TPP's visual effects. Under these criteria, significant effects on visual resources would result from:

- Removal or substantial alteration of an important scenic or aesthetic resource or substantial blockage of existing views of scenic vistas or resources. In operational

¹ California Energy Commission, 1999. Final Staff Assessment for the Delta Energy Center, Application for Certification (98-AFC-3), Pittsburg California, p. 184.

² It should be noted that this criterion sets a relatively low threshold for significance by considering effects on landscapes of "moderate" landscape quality. Presumably, this term refers to landscapes of average visual quality. It could be argued that landscapes of average visual quality do not fall within the class of landscape resources implied by the term "scenic vista" used in the CEQA guidelines.

terms, these alterations would exist if there were substantial reduction in the visual quality of views identified to be of moderate to high visual quality and moderately high to high viewer sensitivity.

- Conflict with applicable laws, ordinances, regulations and standards (LORS) for visual resources identified in the general plans or zoning ordinances of the local governments with jurisdiction over the project; application of this criterion includes consideration of whether the project would restrict or impair the view within a designated scenic corridor.
- Creation of a new source of substantial light or glare in a location where it didn't exist before and which would pose a hazard or adversely affect day or nighttime views with high or moderately high viewer sensitivity.

5.10.2.3 Project Appearance

Tesla Power Plant

The features of TPP are described in detail in Section 3.0, Facility Description and Location. Figure 3.3-1 is a site plan that indicates the layout of the proposed project features on the site. Figures 3.4-2 and 3.4-3 are elevation views of the project facilities. Figure 3.4-6 is an overhead (oblique) view of a computer-generated model of the plant that allows the plant's various features and their relationships to each other to be readily seen. Table 5.10-2 summarizes the dimensions of the power plant's major features.

Table 5.10-2 Approximate Dimensions of the Major Power Plant Features

Feature	Height (feet)	Length (feet)	Width (feet)	Diameter (feet)
HRSG Units	75	170	30	--
HRSG Stacks	200	--	--	19
Combustion Turbines	45	125	25	--
Cooling Tower	56	1,060	43	30 (fan)
Raw Water Storage Tank	48	--	--	180
Demineralized Water Storage Tank	40	--	--	45
Control/Administration	15	145	50	--
Maintenance Building	15	135	90	--
Poles supporting power line connecting turbines to switching station	90	--	--	3

After construction, the power plant structures will have a neutral, tan-gray finish that will be consistent with the color of the area's dry season vegetation and the colors of many of the surrounding facilities, and will help the plant fade into the background in the more distant views. The final color treatment will be developed in consultation with the staff of Alameda County and the CEC. An eight-foot chain link fence, with an additional two feet of barbed or razor wire will surround the power plant.

Electrical Transmission System

Electricity will be conveyed from the power plant to the Tesla Substation to the south by means of a overhead line carried on tubular steel transmission poles (see Figure 3.6-2). The plant switchyard will use conventional air-insulated outdoor switchgear. The tap structures, H-frame pole structures that will serve as the take-offs (see Figures 3.4-1, 2, 3, 4, and 5) will be 30-90 feet high. The layout of the transmission line interconnect is indicated in Figure 3.6-2.

Approximately 1800 feet of what is known as the “Ravenswood Line” will be relocated from the north end of the Tesla Substation to the southwest side of the substation (see Figure 3.6-2). The relocation of this transmission line will result in the line crossing over Patterson Pass Road and the entrance driveway to the substation. The Ravenswood line will be aligned between several other transmission lines and will not be visually isolated.

Natural Gas and Water Supply Pipelines

The design features of the natural gas and water supply pipelines that would be built to serve the project are described in Sections 3.7.2 and 3.7.4, respectively. The locations of these pipelines are indicated on Figure 3.2-2. Since these lines would be buried and the surface conditions restored, the lines themselves would not be the source of long-term changes to the visual environment. Any noticeable visual effects associated with the pipelines would be restricted to the construction phase. During construction, the area along the rights-of-way would be temporarily disrupted by machinery, excavated piles of dirt, construction vehicles, and other disturbances associated with pipeline construction. However, these effects would be minor and temporary, and would not be significant.

The color of disturbed soil caused by trenching may be somewhat similar to the surface however; it may be slightly different in color and texture. The minor color contrast would not attract attention and will wear with wind and rain erosion over time to blend to a degree of no apparent change. Since the natural gas pipeline will be underground and because surface conditions will be restored after trenching and construction, the pipeline will not produce any impacts on visual resources.

Construction Laydown Area

As detailed in Section 3.7, construction of the project from site preparation and grading to commercial operation is expected to take place during a 23-month period. Figure 3.5-3 illustrates areas that may be used for laydown of equipment and parking for construction workers during the construction period. The parked vehicles, equipment, and stored materials in this area will be most visible from Midway Road. A temporary security fence will be installed on the eastern border of the construction laydown area.

Architectural Treatment

TPP will be designed to meet the architectural treatment requirements of Alameda County General Plan. A color scheme will be developed to help the buildings and structures on the

site be as unobtrusive as possible. The preliminary design and color treatments for the plant are presented in the simulations prepared for each of the KOPs.

Landscaping

The two main goals of the proposed landscaping plan are as follows:

1. To screen as much as possible the power plant from view from Midway Road and, to a lesser extent, from Patterson Pass Road and other viewpoints.
2. To develop a Range Management Plan for maintenance of the grassland area around the power plant.

The concept behind the landscaping is to use mainly indigenous plants that are drought and wind tolerant (see Figure 3.7-5, Plant Matrix on the Conceptual Landscape Plan) to minimize maintenance, and for long-term survival. Trees and shrubs will be planted at selected locations on the perimeter of the power plant to create a border appearance and help to screen the power plant from the most sensitive viewpoints. Approximately 50% of the trees along the north and west sides of the power plant will be planted in a large size (24 inch box) and all shrub-like trees will be planted at a large size (15 gallon). This will insure an established appearance within a short time and help to screen the power plant from the most sensitive viewpoints.

Historically, the rolling hills were covered with dense groves of bay and oak trees similar to the vegetation around Mount Diablo and in other areas in the county, which are not currently grazed. However, due to intense cattle grazing, the trees died off from compaction of the soil and other disturbance to the natural vegetation. The landscape plan utilizes the California bay as a wind buffer to protect the river she oak and coast redwoods from wind damage. All of the selected plants can withstand the climate and silty clay soil typical of the area. The area around the power plant and around the planted areas will be left in a natural grassland state to allow for natural succession of wild grasses and wildflowers and to visually blend with the surrounding area. A temporary fence will protect all landscape plants until they are established. A temporary, low precipitation emitter irrigation system with an automatic irrigation controller will be installed to provide uniform irrigation coverage with low water use.

The grassland areas around the power plant will be maintained through a Range Management Program utilizing high intensity, short duration, rotational grazing to control the fuel load and prevent the grasses from becoming a fire hazard.

The Conceptual Landscape Plan conforms to: the Alameda County General Plan; the East County Area Plan, Volume 1; and the Alameda County Zoning Ordinance. PG&E's planting requirements are that no trees over 25 feet in height will be planted within transmission line right-of-way areas and only shrub species with non-destructive root systems, specifically recommended by PG&E will be planted over the gas pipeline.

Lighting

The TPP will require nighttime lighting for operational safety and security. To reduce any off-site impacts of this requirement, lighting at the facility will be restricted to areas required for safety and security. Lights will be directed on-site so that no significant light or glare will be focused off-site. Fixtures of a non-glare type will be specified. In addition, the nighttime lighting system will include switches, timers, and sensors to minimize the time the lights are on in order to further reduce the potential for project lighting to be visible off-site.

Visible Plumes

The formation of visible water vapor plumes above the cooling tower occurs during periods of cold weather and high humidity. To reduce visible plume size and its frequency, TPP's cooling towers will be designed as plume abated towers. Modeling of cooling tower plumes is discussed in air quality section of this AFC. Based on the modeling results, the plume formation in TPP is not expected to have a significant visual impact.

Similarly, the HRSG stacks will also generate visible plumes during cold weather operation. However, their size and frequency is normally much less than that of cooling towers.

5.10.2.4 Assessment of Visual Effects**Key Observation Points (KOPs)**

KOP 1 – Midway Road Directly Northeast of the Site. Figures 5.10-4b and 5.10-4c represent the view of the completed TPP, as it will appear from KOP 1 at the start of operation and after 20 years.

As these simulations suggest, the plant will be clearly visible in the foreground from vehicles traveling on this short segment of Midway Road. Until landscaping becomes mature, the TPP will become a major element in the foreground of the view. The project will substantially change the existing view from open agricultural land used for grazing to a view of the power plant facility. The HRSG stacks will be visible against the sky, which will tend to increase their visual salience. Mitigation with landscaping will help to reduce impacts to visual quality. Because of the relatively low number of viewers on Midway Road and the short duration of views, the visual sensitivity from this KOP is considered to be moderately low. Although the visual quality is characterized moderate, construction of TPP will result in a visual quality rating of low. After the landscaping is mature, portions of the facility will still be visible, however the landscaping will reduce the visual impact.

KOP 2 – Midway Road Southeast of the Project Site. Figures 5.10-5b and 5.10-5c represent the view of the TPP site from Midway Road when traveling north. These simulations represent the view of the completed project, as it will appear at the start of operation and after 20 years. The project will noticeably change the existing view that persons driving north on Midway Road have because TPP will appear in the middle ground of their view.

Even though the view from this KOP will be modified, the overall character of the viewshed will remain similar. The view was dominated by rolling hills of grassland and several steel

lattice electrical towers, and now, an additional man-made structure will gain the attention of those in vehicles passing by. The HRSG stacks, water storage tank, and cooling tower cones will be visible against the sky, which will tend to increase their visual salience. The project will change the existing view from what appears rural, to a more industrial setting, surrounded by rolling hills. After project construction, the visual quality of this view will be classified as moderately low.

KOP 3 – Midway Road/Patterson Pass Road Intersection. Figures 5.10-6b and 5.10-6c are simulations of the view toward the project from KOP 3 at the intersection of Midway Road and Patterson Pass Road. These simulations represent the view of the completed project, as it will appear at the start of operation and after 20 years.

As these simulations indicate, the TPP will be in the middle ground of the view. The HRSG stacks, water storage tank, as well as cooling tower cones will be visible against the sky, which will tend to increase their visual salience. The distance of this KOP to the TPP, with rolling terrain to the east and far west, and numerous steel lattice electrical transmission towers in the direct foreground, reduce the visual impacts below significant. Mature landscaping will provide some screening, and together with the distance between the TPP and this KOP, the overall visual quality will remain moderately low.

KOP 4 – View from Nearest Residences to the Southeast. Figures 5.10-7b and 5.10-7c are simulations of the view of the TPP, as it will appear from KOP 4 at the front of the nearest residences. These simulations represent the view of the project, as it will appear from KOP 4 at the start of operation and after 20 years.

As these simulations indicate, the proposed project will be in the middle ground/background of the view from these residences. Only the HRSG stacks will be visible against the sky, and because of their distance from this KOP, the stacks will appear shorter than the numerous lattice towers observed in this view. The Tesla Substation, just outside of the view portrayed by Figure 5.10-7, and the numerous steel lattice electrical towers are dominant visual features in the foreground to the west.

Due to the distance from the TPP site to KOP 4 and the continued dominance of the Tesla Substation and electrical transmission towers, the overall character of the viewshed with TPP will be unchanged with a visual quality rating of moderately low.

KOP 5 – Entrance to Mulqueeny Ranch at Patterson Pass Road. Figures 5.10-8b and 5.10-8c are simulations of the view of the TPP, as it will appear from KOP 5 at the entrance to Mulqueeny Ranch off of Patterson Pass Road. These simulations depict the project as it will appear at the start of operation and after 20 years.

As indicated by the simulations from this KOP, views toward the plant are partially blocked by the steel lattice electrical transmission lines converging on the Tesla Substation, and the rolling hills to the east and west of the TPP project site. The only project features that will be seen against the sky are the HRSG stacks, which, because of their distance from this KOP, appear shorter than the nearby lattice structures. From this KOP, TPP is in the background and the Tesla Substation is in the foreground. At this KOP, the TPP will not impact the

overall character of the view, as the dominant feature remains the Tesla Substation. Visual quality remains low.

KOP 6 – View From the Rail Line to the Northeast. Figures 5.10-9b and 5.10-9c represent the view of the TPP site, as it will appear from the Union Pacific rail line. These simulations depict what the project will look like at the start of operation and after 20 years.

As the simulation indicates, TPP is in the background in this KOP. Wind turbines in the middle ground and foreground dominate the site. The presence of the TPP in the background does not change the overall character of the area, because the project blends in with the surrounding rolling hills.

Because of the distance to the TPP site and the dominance of the wind generators, the visual impact of the TPP will not be significant. The visual quality of the view from this KOP will be unchanged and is moderately low.

Light and Glare

The TPP's effects on visual conditions during hours of darkness will be very limited. As indicated previously, some night lighting will be required for operational safety and security. High illumination areas not occupied on a regular basis will be provided with switches or motion detectors to light these areas only when occupied. At times when lights are turned on, the lighting level will be limited to that required for personnel safety, will not be highly visible offsite, and will not produce offsite glare effects. Specification of non-glare fixtures and placement of lights to direct illumination into only those areas where it is needed will restrict the offsite visibility and potential glare of the lighting. The landscape screening designed around the site will further reduce the visibility of the facility's night lighting.

Water Vapor Plumes

The project will employ plume abatement technology that will significantly reduce the times when there is a visible water vapor plume from the cooling tower. Calculations of plume occurrence are provided in AFC Section 5.2.4.6. During daytime hours with no fog present, the plume height will be less than 40 meters approximately 92% of the time. Because of the low frequency of the visible plume, it is not expected to cause a significant impact.

5.10.3 Assessment of Significance of Overall Visual Impacts

The CEQA Guidelines define a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including objects of historic or aesthetic significance (14 CCR, § 15382)." The five questions related to aesthetics that are posed for lead agencies and the answers to them for the TPP are:

1. Would the project have a substantial adverse effect on a scenic vista?

In the project viewshed, there are no developed or officially designated scenic vistas or roadside scenic areas. The PG&E TESLA Substation, transmission line, and the wind

power farms have altered the visual qualities of much of the area around the TPP. With such a strong presence of visual effects in the immediate viewshed, TPP will have a minimal effect on the quality of the overall scenic vista.

2. *Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

This question does not apply to the TPP project because none of the project facilities fall within the boundaries or viewshed of a state scenic highway or other important scenic resource.

3. *Would the project substantially degrade the existing visual character or quality of the site and its surroundings?*

KOP 1 is the only view where there will be a change to the visual quality of the site or surroundings: visual quality will change from moderate to low. Views from KOP 1 are from cars travelling on Midway Road. Because of the low number of viewers from this location and the short duration of the views, this KOP is considered to have moderately low sensitivity. Mitigation for visual impacts from this KOP will be provided by the selection of paint finishes for the power plant structures and the landscape plan which includes vegetation that will screen the project as the vegetation matures (see Figure 5.10-4c).

4. *Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?*

As previously described, project light fixtures will be restricted to areas required for safety, security, and operations; lighting will be directed onsite; lighting will be shielded from public view; and non-glare fixtures and use of switches, sensors, and timers to minimize the time that lights not needed for safety and security are on will be specified. These measures should substantially reduce the offsite visibility of project lighting. Offsite visibility of lighting will be further reduced by the landscape plantings that will provide additional screening of any lighting associated with the project's lower elements. With these measures, lighting associated with the project will not pose a hazard or adversely affect day or nighttime views toward the site. As a consequence, the impacts of the project's visual effects related to lighting will be less than significant.

5. *Would the project conflict with any applicable land use plan, policy, or regulation (including, but not limited to a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an aesthetic effect?*

As documented in the LORS analysis in Section 5.10.5, the project will be in conformance with the applicable implementing policies, ordinances, or other regulations specifically related to visual resources identified in the Alameda County General Plan and Zoning Ordinance provisions that pertain to this area.

5.10.4 Proposed Mitigation Measures

The TPP is not expected to cause a significant adverse effect on visual resources. Nonetheless, the following measures will be incorporated into the project.

5.10.4.1 Power Generation Facility

The following mitigation measures have been included in the project design to reduce the TPP facility's impacts on visual resources:

- The project's major structures have been located so as to provide wide setbacks from Midway Road.
- All structures, stacks, buildings, and tanks will be constructed of materials that will restrict glare, and will be finished with flat, neutral tan tones that will blend with the surrounding environment.
- All fencing will be constructed of non-reflective materials, and will be treated or painted to blend with the surrounding environment.
- Signs at the site will be constructed of materials that are non-glare, and will be painted using colors that are unobtrusive.
- Lighting at the power plant site will be limited to areas required for safety. Direction and shielding of lighting to reduce light scatter and glare. Highly directional light fixtures will be used.
- Landscaping will take place along Midway Road, as well as all other areas, which will have a direct view of the TPP site (Figure 3.7-5).

5.10.4.2 Switchyard and Transmission Line

The following mitigation measures for the TPP switchyard and transmission line have been included in the project design:

- The switchyard will make use of low profile equipment to minimize its visibility beyond the surrounding landscape.
- The equipment in the switchyard will have a neutral grayish-tan finish.
- The towers will be constructed of tubular steel to create a trim profile.
- The towers will be treated with a galvanized neutral grayish-tan finish to maximize their integration into the backdrop.
- Non-specular conductors will be used.
- Insulators will be non-reflective and non-refractive.

5.10.4.3 Pipelines

The following mitigation measures have been included as a part of the project proposal to reduce the visual impacts of the pipelines:

- After construction, ground surfaces will be restored to their original condition, and any vegetation or paving that had been removed during the construction process will be replaced.

5.10.5 Cumulative Impacts

Expansion of wind farms in the Altamont Pass area will continue to modify the visual quality of the project area by introduction of man-made elements that will dominate the landscape. PG&E is planning to expand the Tesla Substation to accommodate interconnection with new or upgraded transmission lines. The proposed project will not change the character of the area or cause or contribute to significant cumulative impacts to visual resources.

5.10.6 Applicable Laws, Ordinances, Regulations, and Standards

5.10.6.1 Introduction

This section describes the LORS relevant to the visual resource issues associated with the TPP. No federal, state, or regional laws, ordinances, regulations, or standards are known that would apply to the project's visual resource issues. However, visual resource and urban design concerns germane to the project are addressed in Alameda County's East County Area Plan, the Alameda County Scenic Routes Element, and the Alameda County Zoning Ordinance.

The TPP site, electrical transmission line, water supply pipeline, and approximately half of the natural gas supply pipeline are located within Alameda County. The portion of the natural gas pipeline that is in San Joaquin County will be buried and will not have any impacts to visual resources, so this analysis will be restricted to a review of the Alameda County plans and ordinances that have potential relevance to the visual resource issues.

5.10.6.2 East County Area Plan

The East County Area Plan adopted in 1994 includes a number of provisions that are potentially relevant to the development of the TPP, as follows:

Policy 107A. Policy 107A provides: "To the extent possible, including by clustering if necessary, structures shall be located on that part of a parcel or on contiguous parcels in common ownership on or subsequent to the date this ordinance becomes effective, where the development is least visible to persons on public roads, trails, parks, and other public viewpoints." TPP will comply with this policy because all of the project components are located on one parcel. Landscaping and other mitigation measures have been included in the project design that reduces the potential for impacts to visual resources.

Policy 111. Policy 111 indicates that the County is to require development to maximize views of a number of specified "prominent visual features." The TPP will not impact views of prominent visual features.

Policy 113. Policy 113 calls on the County to require “the use of landscaping in both rural and urban areas to enhance the scenic quality of the area and to screen undesirable views. Choice of plants should be based on compatibility with surrounding vegetation, drought-tolerance, and suitability to site conditions; and in rural areas, habitat value and fire retardance.” The project will be consistent with this policy in that the project will include landscaping around the periphery of the site that will be designed to screen views of project facilities and to create visual interest. In developing its final landscape plan, the Applicant will work with the County to ensure that the plant selections and planting designs meet the County’s goals for habitat enhancement, drought tolerance, compatibility with surrounding vegetation, and fire retardance.

Policy 113A. Policy 113A provides: “In all cases appropriate building materials, landscaping and screening shall be required to minimize the visual impact of development. Development shall blend with and be subordinate to the environment and character of the area where located, so as to be as unobtrusive as possible and not detract from the natural, open space or visual qualities of the area. To the maximum extent practicable, all exterior lighting must be located, designed and shielded so as to confine direct rays to the parcel where the lighting is located.” TPP complies with this policy. Unobtrusive building materials, landscaping, and screening have been provided as part of the project design. Exterior lighting will be limited to that needed for safety and will be directed on-site and shielded.

Policy 113B. Policy 113B provides: “To the maximum extent possible, development shall be located and designed to conform with rather than change natural landforms. The alteration of natural topography, vegetation, and other characteristics by grading, excavating, filling or other development activity shall be minimized. To the extent feasible, access roads shall be consolidated and located where they are least visible from public viewpoints.” The project has been designed to minimize the amount of grading and filling. The access road is very short, approximately 150 feet, and is located to be least visible from public view, while providing sufficient sight distance for vehicle safety.

Policy 117 and Policy 264. Policy 117 indicates that “The County shall require that utility lines be placed underground whenever feasible. When located above ground, utility lines and supporting structures shall be sited to minimize their visual impact.” Policy 264 states “The County shall require new developments to locate utility lines underground, whenever feasible.” The 230-kV lines serving the project will be built overhead rather than underground, which is standard practice for lines of this voltage located in rural and lower density areas. Because the project’s transmission line will be short (0.8 mile in total) and will be built in an area where transmission lines are already a well-established part of the landscape, it will have little effect on the overall visual character and quality of the area.

Policy 197. Policy 197 calls on the County to “manage development and conservation of land in East County scenic highway corridors to maintain and enhance scenic values.”

TPP will be in compliance with this policy as noted in the discussion of the Scenic Route Element of the Alameda County General Plan in Section 5.10.6.3, below.

5.10.6.3 Alameda County Zoning Ordinance

The TPP site lies within an area designated by the Alameda County Zoning Ordinance as A-B-E, which stands for agriculture with minimum lot size of 160 acres. This district has been established to “promote implementation of general plan land use proposals for agriculture and other nonurban uses, to conserve and protect existing agricultural uses, and to provide space for and encourage such uses in places where more intensive development is not desirable or necessary for the general welfare” (Section 17.06.010). The district specifies an extensive list of permitted uses and includes provisions for conditional approval of uses not specifically enumerated. The provisions of the ordinance relevant to the visual resource issues associated with the project are summarized in Table 5.10-3, and a description is provided of the project’s conformance with them.

Table 5.10-3 Consistency with the Alameda County Zoning Ordinance

Provision	Consistency
17.06.060 Building Site	
Every use in an A district shall be on a building site having an area not less than one hundred (100) acres.	The project is in conformance with this ordinance because the TPP site is located on a 60 acre portion of a 160 acre parcel.
17.06.070 Yards	
The yard requirements in an A district are as follows, subject to the general provisions of Section 17.52.330:	The TPP meets all setback requirements.
A. Depth of front yard: not less than thirty (30) feet;	
B. Depth of rear yards: not less than ten feet;	
C. Width of side yards: not less than ten feet.	
17.06.080 Signs	
No sign in an "A" district shall be illuminated.	The TPP will not utilize any illuminated signage.

Source: Alameda County Zoning Ordinance January 2001

5.10.6.4 Scenic Route Element of the Alameda County General Plan

The Scenic Route Element as a part of the County’s General Plan, designates Interstate 580 as a Scenic Freeway, and parts of Patterson Pass Road (between Vasco and Greenville) as a Scenic Rural Route. Patterson Pass Road is located approximately one half mile south of the Tesla Project Site, while Interstate 580 is located approximately one and a half miles north of the site. The policy for visual resources concerning these scenic corridors (the areas extending up to 1,000 feet from the edge of the right-of-way) is to provide for normal uses of land and protect against unsightly features. Normally permitted uses of land are allowed in scenic corridors except that panoramic views and vistas should be preserved and enhanced through supplemental normal zoning regulations with special height, area, and sideyard regulations; through providing architectural and site design review; through prohibition of unsightly development or use of land.

TPP is not within a Scenic Route and will be in compliance with the Scenic Route Element of the Alameda County General Plan.

5.10.7 Permits Required and Permit Schedule

No permits are required specific to visual resource.

5.10.8 References

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